

# Chromalox®

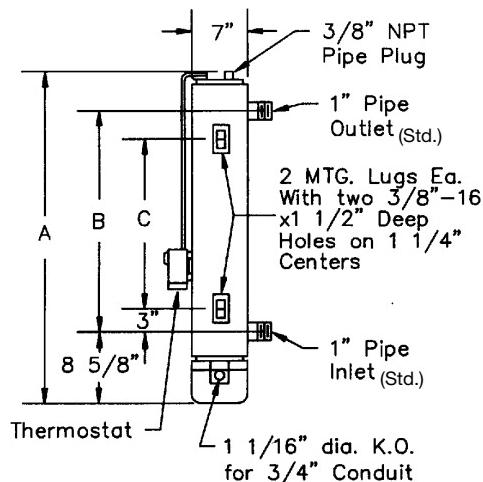
## Installation, Operation and RENEWAL PARTS IDENTIFICATION

### SERVICE REFERENCE

DIV.	SEC. GCHMT	NUMBER 3001
SALES REFERENCE	PE436	
	161-303183-001	
DATE	AUGUST, 1994	

## Chromalox Type GCHMT Circulation Heater For Steam, Gas and Air Heating

### Specifications — Table A



Catalog Number	Voltage	Phase	KW	Watts Per Sq.In.	Dimensions (in.)		
					A	B	C
GCHMT-30105	120	1	1	15	20-1/2	9-3/8	—
GCHMT-3105	240 or 480	1 or 3		23			
GCHMT-30305	240 or 480	1 or 3	3	15	30-5/8	22-1/2	16-1/2
GCHMT-3305				23			
GCHMT-30505	240 or 480	1 or 3	5	15	56-3/8	45-1/4	39-1/4
GCHMT-3505	240 or 480	1 or 3		23	30-5/8	22-1/2	16-1/2
GCHMT-30755	240 or 480	1 or 3	7.5	15	67-1/8	56	50
GCHMT-3075				23	56-3/8	45-1/4	39-1/4
GCHMT-30905	240 or 480	1 or 3	9	15	78-1/8	67	61
GCHMT-3905				23	56-7/8	45-1/4	39-1/4

**WARNING:** Safe operating conditions depend on operating pressure, mass velocity of gas and discharge temperature of the gas. At a given discharge gas temperature heater element sheath temperature, and pipe body temperature tend to increase as gas flow (mass velocity) decreases. The standard GCHMT has a 750°F limitation on the carbon steel body and a 1500°F limit on the incoloy sheath elements. Check factory if any doubt exists as to temperatures that will be encountered in your specific application. A stainless steel body is required at pipebody temperatures above 750°F.

### GENERAL

**DANGER:** This heater is not intended for use in hazardous atmospheres where flammable vapors, gases, liquids, or other combustible atmospheres are present as defined in the National Electric Code. Failure to comply can result in explosion or fire.

Hazardous area terminal enclosures are available, consult your local Chromalox representative for details.

The GCHMT series is a general-purpose gas or steam circulation heater intended for use indoors.

The 3 incoloy-sheathed tubular elements are centered in a 3" diameter steel heating chamber and welded to a removable screw

plug. The assembly is surrounded by 1-1/2" insulation and sheet metal jacket.

Depending upon the specifications, the GCHMT may or may not be factory equipped with AR or other Chromalox thermostats. Such thermostats function to control outlet temperatures under abnormal flow condition. These controls do not fail-safe.

**WARNING:** Users should install adequate back-up controls and safety devices with their electric heating equipment. Where the consequences of failure may be severe, back-up controls are essential. Although the safety of the installation is the responsibility of the user, Chromalox will be glad to make equipment recommendations.

### INSTALLATION

**WARNING: Hazard of electric shock. Disconnect all power before installing heater.**

1. Vertical mounting (axis of chamber vertical as in sketch above) is preferred. Check factory for recommendations on horizontal mounting.
2. To avoid excess temperatures at electrical wiring, mount heater with terminal enclosure at bottom, and use lower nozzle as inlet to the circulating steam, air, or gas.
3. The GCHMT series of circulation heaters are provided with mounting lugs to support the heater chamber. Refer to sketch above for location of these mounting lugs.
4. Mount heaters to permit unrestrained expansion of chamber

due to temperature. This can be accomplished by using a slotted mounting assembly on either of the lugs.

**5. DANGER: Hazard of fire.** Provide minimum of 6" spacing from a chamber and related piping to nearest combustible material. Avoid operation of heater near combustible fluids or in combustible vapor or gas laden atmosphere.

**6.** Provide adequate space at terminal end to permit withdrawal of the heater from chamber should servicing be required.

**7.** If two or more heaters are needed to provide the needed heating capacity, arrange them for series gas or vapor flow.

**8. DANGER: Possible explosion.** A pressure relief valve should be provided by customer at outlet of vessel. There should be no other valving between vessel and valve.

## WIRING

**WARNING: Hazard of electrical shock. Any installation involving electric heaters must be grounded to earth to eliminate shock hazard.**

1. Electrical wiring to heater must be installed in accordance with the National Electric Code and/or local electrical codes.
2. When element wattages are not equal, heaters must not be connected in series.
3. Electrical wiring to heater should be connected in rigid con-

duit or in flexible hose to keep corrosive vapors and liquids out of the terminal housing. If high humidity is encountered, the conduit should slope down away from the heater.

4. If flexible cord is employed, a watertight connector should be used for entry of the cord into the terminal box. Outdoor applications require liquid-tight conduit and connectors.
5. Bring the power line wires through the opening in the terminal box. Connect line wire as shown in the diagram. (Figures 1 thru 3)

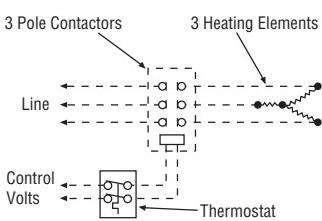


Figure 1  
For Three Phase WYE Heaters

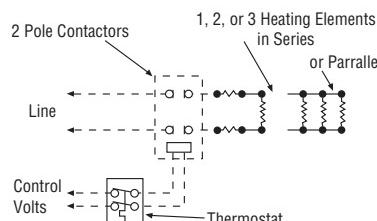


Figure 2  
For Single Phase Heaters

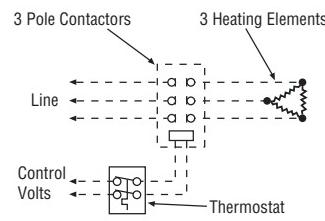


Figure 3  
For Three Phase Delta Heaters

NOTE: Dotted lines indicate "customer furnished."

## OPERATION

1. Do not heat materials that are corrosive to the heating element sheath or chamber. For steam heating service, condensate drain may be provided from bottom of chamber. Check factory.
2. Terminal ends of heater must be protected from dripping condensation spray or direct spill-over of material whose presence at the terminals may damage heater electrical insulation. Liquid-

tight terminal enclosures are available to protect heater. Check with local sales representative.

3. If foreign material is carried by the gaseous flow, install suitable filters in the inlet pipe to the heater.
4. Do not allow heater to operate when steam, air or gas flow is interrupted.

## MAINTENANCE

**WARNING: Hazard of electric shock. Disconnect all power before servicing heater.**

1. Remove heating element assembly periodically to check heater sheath for corrosion or excessive oxidation. Correct operating conditions to minimize sheath deterioration.

tight terminal enclosures are available to protect heater. Check with local sales representative.

2. Periodically check temperature control and limit control operation to insure accurate and safe process operation.
3. Check all electrical connections periodically and retighten connections which may have loosened in service. Replace wire terminals which show signs of oxidation which would interfere with establishment of reliable electrical connections.

## RENEWAL PARTS IDENTIFICATION

THERMOSTAT 200-550°F.....300-048518-013

### Limited Warranty:

Please refer to the Chromalox limited warranty applicable to this product at <http://www.chromalox.com/customer-service/policies/termsofsale.aspx>.

**Chromalox®**  
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